



MACTEC PROJECT NO.: 6468-06-1472				COUNTY Louisa, VA		GEOLOGIST J. Lachewitz/ S. Lehman								
SITE DESCRIPTION NORTH ANNA COL						GROUND WATER (ft)								
BORING NO. B-916		DRILL METHOD: Rotary Wash/Core		SAMPLE METHODS: SPT/CORE		0 HR. ND								
COLLAR ELEV. 276.2 ft (NAVD88)		NORTHING 3,910,050 US ft (NAD83)		EASTING 11,686,009 US ft (NAD83)		24 HR. ND								
TOTAL DEPTH 100.3 ft		DRILL MACHINE CME 45 Trailer		DRILLER: F. Cox/D. Rhodes		HAMMER TYPE 140 lbs Auto								
DATE STARTED 9/28/06		COMPLETED 10/4/06		CORE BARREL TYPE: HQ 3 triple tube-wireline										
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	SOIL AND ROCK DESCRIPTION		
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100			LOG	
276.2					Ground Surface								276.2	0.0
274.7	1.5										916-1		SILT (ML) strong brown (7.5YR 4/6), moist, medium stiff to very stiff, sandy, micaceous (Residual Soil)	
272.7	3.5	1	2	3							916-2			
271.2	5.0	5	4	13							916-3			271.2
		40	50/0.5										Fine to coarse SAND (SP) light brownish gray (2.5Y 6/2 and 10YR 6/2) and light yellowish brown (10YR 6/4), moist, very dense to dense, silty, micaceous, relict rock fabric (Residual Soil)	
268.3	7.9										916-4			
265.7	10.5	13	12	33							916-5			
263.3	12.9	19	12	12							916-6			
		5	16	25									Weathered Rock: BIOTITE-QUARTZ GNEISS Hard Rock: White, moderately weathered to fresh, close to wide fracturing, moderately hard to very hard, BIOTITE-QUARTZ GNEISS with trace magnetite	
258.3	17.9										916-7			
253.3	22.9	11	17	16							916-8			
250.6	25.6	12	16	12							916-9		251.1	25.1
		50/0.0											250.6	25.6
													225.9	50.3

NORTH ANNA COL. ... JRE NORTH ANNA COL DATA REPORT REV0.GPJ NORTH ANNA COL.GDT 1/19/07



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TOTAL DEPTH 100.3 ft		DRILL MACHINE CME 45 Trailer				DRILLER: F. Cox/D. Rhodes				HAMMER TYPE 140 lbs Auto						
DATE STARTED 9/28/06			COMPLETED 10/4/06			CORE BARREL TYPE: HQ 3 triple tube-wireline										
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT						SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION		
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100						
201.4					Continued from previous page											
															Hard Rock: White, very slightly weathered to fresh, wide fracturing, hard to very hard, QUARTZ-BIOTITE GNEISS with trace magnetite (continued)	
														192.4	83.8	Hard Rock: Light gray, fresh, close to wide fracturing, hard to very hard, QUARTZ GNEISS with biotite, trace magnetite and pyrite
														175.9	100.3	Boring and coring terminated at 100.3 ft in Hard Rock: Hard, QUARTZ GNEISS with biotite

NORTH ANNA COL CORE NORTH ANNA COL DATA REPORT REV0.GPJ NORTH ANNA COL.GDT 1/19/07



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SITE DESCRIPTION NORTH ANNA COL										GROUND WATER (ft)	
BORING NO. B-916		DRILL METHOD: Rotary Wash/Core				SAMPLE METHODS: SPT/CORE				0 HR. ND	
COLLAR ELEV. 276.2 ft (NAVD88)		NORTHING 3,910,050		US ft (NAD83)		EASTING 11,686,009		US ft (NAD83)		24 HR. ND	
TOTAL DEPTH 100.3 ft		DRILL MACHINE CME 45 Trailer				DRILLER: F. Cox/D. Rhodes				HAMMER TYPE 140 lbs Auto	
DATE STARTED 9/28/06				COMPLETED 10/4/06				CORE BARREL TYPE: HQ 3 triple tube-wireline			
CORE SIZE HQ3				TOTAL RUN 74.7 ft							
ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN		SAMP. NO.	STRATA		L O G	DESCRIPTION AND REMARKS	
				REC. (ft) %	RQD (ft) %		REC. (ft) %	RQD (ft) %			
										Begin Coring @ 25.6 ft	
250.6	25.6	4.7	N=50/0.0 5:28 7:28 7:45 9:20	(4.6) 98%	(4.6) 98%	1				250.6 Hard Rock: White, moderately weathered to fresh, close to wide fracturing, moderately hard to very hard, BIOTITE-QUARTZ GNEISS with trace magnetite (1 joint at 50° weathered with Fe stain)	
245.9	30.3	5.0	10:27/0.7 7:39 7:23 4:58 4:56 8:23	(5.0) 100%	(5.0) 100%	2				(2 joints at 0-15° with Fe stain)	
240.9	35.3	3.0	12:30 9:36 3:10	(2.8) 93%	(2.8) 93%	3				(2 joints at 5° with slight Fe stain)	
237.9	38.3	2.0	3:29 2:43	(1.8) 90%	(1.3) 65%	4				(3 joints at 5-20° with Fe stain)	
235.9	40.3	5.0	4:43 4:49 5:27 8:16 11:41	(5.0) 100%	(5.0) 100%	5				-No Joints	
230.9	45.3	5.0	4:27 4:16 3:20 2:52 3:33	(4.8) 96%	(4.4) 88%	6				(4 joints at 0-45° weathered with Fe stain and trace clay)	
225.9	50.3	5.0	3:25 4:47 3:31 3:50 4:44	(4.5) 90%	(4.5) 90%	7				225.9 Hard Rock: White, very slightly weathered to fresh, wide fracturing, hard to very hard, QUARTZ-BIOTITE GNEISS with trace magnetite (2 joints at 25° with Fe stain)	
220.9	55.3	5.0	7:10 9:48 8:05 3:47 5:01	(5.0) 100%	(5.0) 100%	8				-No Joints	
215.9	60.3	5.0	10:12 5:34 3:54 4:17 4:31	(5.0) 100%	(5.0) 100%	9				-No Joints	
210.9	65.3	2.1	11:22 12:13/1.1	(2.1) 100%	(2.0) 95%	10				-No Joints	
208.8	67.4	2.9	5:05 2:56 2:37/0.9	(2.9) 100%	(2.9) 100%	11				-No Joints; 0.5 ft thick quartz vein+pyrite at 68.7 ft	
205.9	70.3	5.0	2:45 2:20 1:52 3:08 4:37	(5.0) 100%	(5.0) 100%	12				(2 joints at 20-25° slightly weathered)	
200.9	75.3	5.0	6:05 7:39 9:08 14:06 3:52	(5.0) 100%	(5.0) 100%	13				-No Joints	
195.9	80.3	3.5	4:55 6:02 7:26	(3.5) 100%	(3.5) 100%	14				-No Joints	
192.4	83.8	1.5	7:10/0.5 3:52	(1.4) 93%	(1.4) 93%	15				192.4 Hard Rock: Light gray, fresh, close to wide fracturing, hard to very hard, QUARTZ GNEISS with biotite, trace magnetite and pyrite	
190.9	85.3	5.0	7:32/0.5 3:49 3:43 3:53 5:35 9:18	(5.0) 100%	(5.0) 100%	16				-No Joints -No Joints	
185.9	90.3	5.0	4:20 4:50 5:40 8:12 12:42	(5.0) 100%	(5.0) 100%	17				-No Joints	
180.9	95.3	5.0	4:22 3:39 2:24 2:00 3:24	(5.0) 100%	(4.0) 80%	18				(8 joints at 45° weathered with Fe stain; 1 joint at 20° slightly weathered; moderately weathered fracture zone from 98.0-99.0 ft)	
175.9	100.3									175.9	

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Coring terminated at 100.3 ft in Hard Rock: Hard, QUARTZ GNEISS with biotite



B-916 - Box 1



B-916 - Box 2

B-916 - Box 3



B-916 - Box 4
B-916 - Box 5